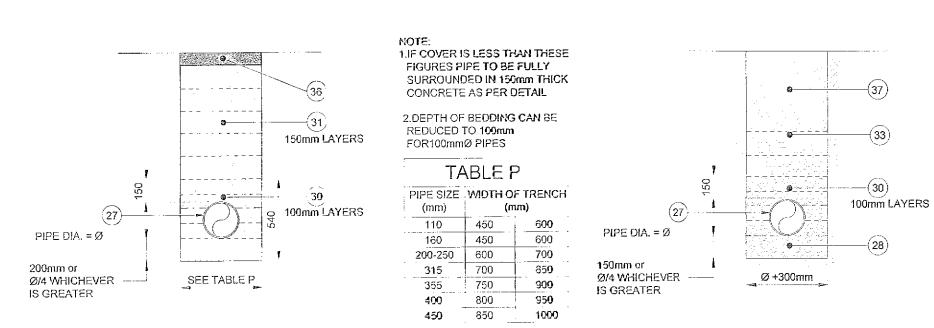


GRANULAR BEDDING



UNDER ROADS/HARDSTANDINGS/FOOTPATHS COVER > 1.2m

Ø +300mm

COVER > 1.2m

(25) or (26)-

Ø/4 WHICHEVER ——

PIPE DIA. = Ø

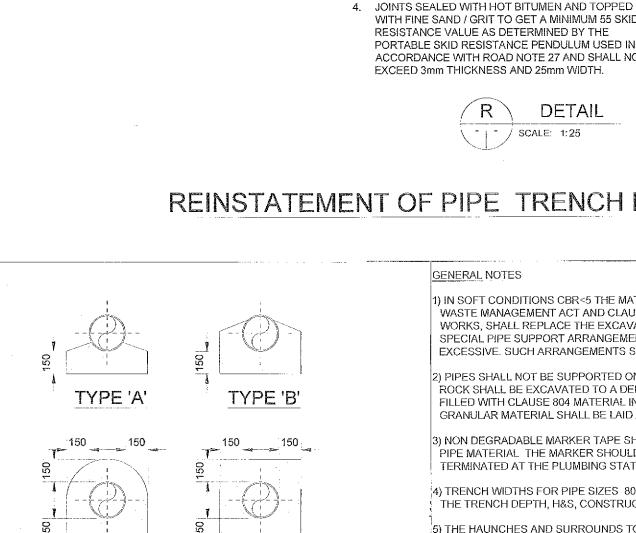
200mm or

IS GREATER



UNDER LANDSCAPED AREAS

UPVC PIPES BEDDING



STAGE 1

LEAVE FOR 6 MONTHS TO CONSOLIDATE

PIPE BEDDING &

DETAILS M,N,P,S

COVER AS PER

or Q

GENERAL NOTES

1) IN SOFT CONDITIONS CBR<5 THE MATERIAL SHOULD BE EXCAVATED AND DISPOSED IN ACCORDANCE WITH THE WASTE MANAGEMENT ACT AND CLAUSE 804 MATERIAL IN ACCORDANCE WITH THE NRA SPECIFICATION FOR ROAD WORKS, SHALL REPLACE THE EXCAVATED MATERIAL, WRAPPED IN GEO-TEXTILE SHEETING, ALTERNATIVELY SPECIAL PIPE SUPPORT ARRANGEMENTS INCLUDING PILING ETC. MAY BE REQUIRED WHERE THE SOFT MATERIAL IS EXCESSIVE. SUCH ARRANGEMENTS SHALL BE ASSESSED BY IRISH WATER BEFORE ADVANCING WITH THE WORK.

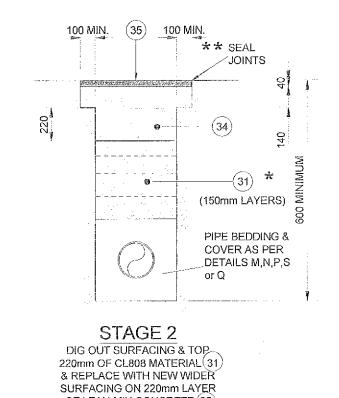
2) PIPES SHALL NOT BE SUPPORTED ON STONES, ROCKS OR AND HARD OBJECT AT ANY POINT ALONG THE TRENCH. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE ACTUAL DEPTH OF THE TRENCH WITH THE VOID FILLED WITH CLAUSE 804 MATERIAL IN ACCORDANCE WITH THE NRA SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL

3) NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED AT TOP OF PIPE BEDDING LAYER. IN CASE OF NON METAL PIPE MATERIAL THE MARKER SHOULD INCORPORATE A TRACE WIRE WHICH IS LINKED TO THE FITTINGS AND AND TERMINATED AT THE PLUMBING STATION AND DISCHARGE MANHOLE.

(4) TRENCH WIDTHS FOR PIPE SIZES 80mm AND LESS MAY BE <500mm SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, H&S, CONSTRUCTION ACCESS REQUIREMENTS.

6) EXPANSION JOINTS IN THE CONCRETE SHALL BE PROVIDED. AT ALL PIPE JOINTS TO ALLOW FOR PIPE FLEXIBILITY. COMPRESSIBLE FILLER BOARD TO BE IN ACCORDANCE WITH BS EN 622-1 AND BS EN 622-4 AND TO BE 18mm THICK. 7) POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.

8) BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC PIPES.



NOTES:

OF THE MANHOLE WALL.

3.) MANHOLE CONSTRUCTION:

MORTAR AS THE BLOCKS ARE LAID.

TO LINE UP

ACCEPTABLE,

8) 600mm SQUARE OPE IN ROOF.

91.1983 SET IN C50/60 MORTAR.

1) 225mm THICK C30/37 MASS CONCRETE FOUNDATIONS,

2.) PREFORMED HALF CIRCLE CHANNEL PIPES, THE THE PIPELINE MAY.

CUT OUT TO HALF DIAMETER, PROVIDED FLEXIBLE JOINTS ARE

WHERE PRACTICABLE BE LAID THROUGH THE MANHOLE & THE CROWN

SITUATED ON EACH SIDE NO FURTHER THAN 600mm FROM INNER FACE

NOTE: WHERE PIPE DIAMETER CHANGES AT A MANHOLE PIPE CROWNS

a) FOR SURFACE WATER MANHOLES HIGH-DENSITY BLOCKS 20N

406. BEDS & VERTICAL JOINTS TO BE COMPLETELY FILLED WITH

STRENGTH TO I.S. EN 771 OR C30/37 INSITU CONCRETE TO IS EN 206.

b) BLOCK WORK SHALL BE EMBEDDED & JOINTED USING MORTAR TO IS

c) ALL FOUL MANHOLES MUST BE FACED IN SOLID ENGINEERING BRICK

(MiN CLASS 'A' OR 'B') OR INSITU CONCRETE FOR 1m ABOVE BENCHING

LEVEL. BRICK TO BE BONDED TO BLOCK WORK USING GARDEN WALL

d) JOINTS SHALL BE FLUSH AND POINTED AS THE WORK PROCEEDS.

DEEPER MANHOLES WILL BE CONSIDERED BUT SUCH WILL REQUIRE

DETAILED STRUCTURAL DESIGN AND WRITTEN APROVAL FROM IRISH

BRICK CLASS 'A' OR 'B'. RELIEVING ARCHES USED IN BRICK OR BLOCK

ARCH IS TO BE FORMED FOR PIPE DIAMETER GREATER THAN 600mm.

WORK MANHOLES EXTEND OVER FULL THICKNESS OF WALL A DOUBLE

6) BENCHING FINISHED IN SAND-CEMENT MORTAR WITH SMOOTH TOWEL

7) STANDARD RUNGS AT 300mm c/c VERTICALLY & GALVANISED TO THE

LATEST VERSION OF BS 729 OR EQUIVALENT. NOTE IRONS ARE NOT

9) PRECAST R.C ROOF SLAB SHALL BE 200mm THICK CLASS C30/37 WITH

10) 1 TO 2 COURSES OF SOLID ENGINEERING BRICKS CLASS 'B' TO IS

11) CLASS D400 OR E600 MANHOLE COVER AND FRAME TO IS EN 124.

GREEN AREAS, NON-ROCK DESIGN, CLOSED KEYWAYS

150mm DEEP FRAME FOR ROADS & 100mm DEEP FOR FOOTPATHS &

CAST IRON) 600 x 600 (600Ø) CLEAR OPENING, COVER & FRAME COATED

IN BITUMEN OR OTHER APPROVED MATERIAL, COVER TO HAVE MINIMUM

PREVENT COVERS FALLING INTO MANHOLE, FRAMES SHALL BE BEDDED

MANUFACTURED FROM SPHERICAL GRAPHITE CAST IRON (DUCTILE

MASS OF 140kg/M2 FRAME BEARING AREA SHALL BE DESIGNED TO

12) SHORT LENGTH PIPE & PIPE JOINT EXTERNAL TO MANHOLE SHALL

RAILINGS TO BE PROVIDED IN BENCHING OF SEWERS GREATER THAN

EXCEED 450mmØ, COMPLYING WITH BS 4942 PART 2 OR EQUIVALENT.

15) WHEN THE DEPTH OF MANHOLES TO INVERT IS GREATER THAN 3.0m

EQUIVALENT EXCEPT THAT STRINGERS SHOULD BE NOT LESS THAN

ON APPROVED MORTAR TO MANUFACTURERS INSTRUCTIONS.

NOT EXCEED 600mm FROM THE INNER FACE OF MANHOLE WALL.

13) TOE HOLES OF 230mm MINIMUM DEPTH & GALVANISED SAFETY

14) A STAINLESS STEEL CHAIN IS TO BE PROVIDED ON PIPES THAT

LADDERS SHALL BE USED, INSTEAD OF RUNGS TO BS 4211 OR

SHOULD MEET THE DIMENSIONAL REQUIREMENTS OF BS4211 OR EQUIVALENT. DISTANCE FROM THE TOP RUNG OF THE LADDER TO

THE MANHOLE WALL AT INTERVALS OF NOT MORE THAN 2.0m.

18) PIPE SHOULD BE CUT FLUSH WITH THE INSIDE SURFACE OF THE

19) POSITION OF 910 SQUARE OPE IN INTERMEDIATE ROOF SLAB.

COMPLY WITH CLASS 2 SECTION 6.2.7, BS 8110:PART 1:1997

f) REINFORCEMENT TO SLABS ENGINEERS DETAILS.

CONSTRUCTED TO IS EN 1917 & IS 420:2004

TO ALLOW VIEWING OF ONCOMING TRAFFIC

APPROVED PREFORMED JOINTING STRAP

150mm THICK GRADE C16/20 CONCRETE.

STANDARD CLASS M OR CLASS H

CLASS 160 OR CLASS 200

a) ALL MANHOLES SHALL BE WATERTIGHT TO THE SATISFACTION OF

b) FORMWORK TO REINFORCED CONCRETE & MASS CONCRETE SHALL

c) FINISH TO THE TOP OF SLABS SHALL COMPLY WITH TYPE A SECTION

HAVING A CO-ORDINATING SIZE OF 450 x 225 x 100. FORT PIPE DIAMETER

OF >750mm USE MANHOLE WITH INTERNAL DIAMETER SIZE = PIPE SIZE

e) MANHOLES ARE DESIGNED TO BS8005 & WALL THICKNESS TO IS325,

BLOCK WORK DESIGN CODE TAKING GRANULAR FILL PRESSURE & H.B.

20) FOR MANHOLES >3m DEPTH TO INVERT USE C30/37 INSITU CONCRETE.

NEAREST CARRIAGEWAY, MANHOLE STEPS-ACCESS TO BE POSITIONED

23) FOR BEDDING & SEALING OF CHAMBER RINGS, THE TOP RING (TO PRECAST OVER SLAB) & BOTTOM RING TO BE BEDDED WITH CEMENT MORTAR. FOR INTERMEDIATE RINGS, JOINTS TO BE SEALED WITH

24) PRECAST MANHOLES TO BE SURROUNDED WITH A MINIMUM OF

26) VIRTIFIED CLAY PIPES AND FITTINGS COMPLYING WITH THE

ACCORDANCE WITH THE REQUIREMENTS OF IS424

A) 14mm TO 5mm GRADED AGGREGATE OR.

MINIMUM COMPACTED COVER OF 150mm.

B) 10mm SINGLE SIZE AGGREGATE

25) CONCRETE SEWER PIPES WITH SPIGOT & SOCKET JOINTS & RUBBER

FITTINGS TO TO COMPLY WITH IS/EN 1916 & IS 6 2004 OR EQUIVALENT

REQUIREMENTSOF IS/EN 295-1/2/3: 1992 OR EQUIVALENT STANDARD

27) UNPLASTICISED POLYVINYL CHLORIDE (UPVC) PIPES & FITTINGS IN

28) CONCRETE BED & SURROUND MUST BE A MINIMUM 150mm THICK IN-SITU CONCRETE C16/20 & HAUNCHED HALFWAY UP THE BARREL OF

29) GRANULAR BED AND SURROUND OF RIGID PIPES TO BE EITHER

30) GRANULAR BED AND SURROUND & COVER FOR UPVC TO BE:

B) 10mm SINGLE SIZED AGGREGATE PIPE DIAMETER <315mm

A) 14mm TO 5mm GRADED AGGREGATE 315mm + PIPE DIAMETER

ALL COMPLYING WITH THE REQUIREMENTS OF IS 5: PART 1:1990, TABLE

ON EITHER SIDE OF THE PIPE IN LAYERS NOT EXCEEDING 100mm EACH LAYER BEING COMPACTED BY HAND TAMPING UNTIL THE PIPE HAS A

7 & SHOULD HAVE A COMPACTION FACTOR VALUE OF NOT GREATER

THAN 0.2 WHEN MEASURED IN ACCORDANCE WITH BS 8301: 1985. APPENDIX D. GRANULAR SIDE FILL & COVER TO BE PLACED UNIFORMLY

REINFORCING MESH REF., A393 TO BE FIXED AT MID POINT OF WALL.

ADDITIONAL REINFORCEMENT TO BE SUPPLIED OVER PIPE CROWN.

21) PRECAST MANHOLES, CHAMBER WALLS & COVER SLAB TO BE

22) MANHOLE OPENINGS TO BE SITUATED FURTHEST FROM THE

d) PLAN DIMENSIONS OF MANHOLES ARE BASED ON BLOCKWORK

GROUND LEVEL SHOULD NOT EXCEED 500mm

DIPPED GALVANISED TO BS 729 OR EQUIVALENT.

MANHOLE.

THE ENGINEER

+1m +300mm

SURCHARGE.

6.2.7. BS8110, PART 1997.

525mmØ & DEPTH TO INVERT >3M FOR ACCESS TO INVERT.

40mm COVER TO STEEL DESIGNED TO BS 8100 TO TAKE FULL TRAFFIC

4) RELIEVING ARCH FORMED BY 215 X 103 X 65 SOLID ENGINEERING

5) BENCHING & PIPE SURROUND - C30/37 CONCRETE.

FINISH, AT 1 IN 30 SLOPE TOWARDS CHANNEL.

e) MAX DEPTH OF BLOCKWORK MANHOLE IS 1.2m (THE USE OF BLOCK IN

REINSTATEMENT OF PIPE TRENCH IN EXISTING ROAD

REINSTATEMENT, OR IRONWORK, THE TRIM LINE

2. LEAN-MIX SURFACE TO BE SPRAYED AS PER CLAUSE

3. 100°C HOT BITUMEN BINDER 50 PEN OR COLD

COURSE MACADAM.

MATERIAL

SHOULD BE EXTENDED TO THE INTERFACE OF SUCH

920 (NRA SPEC.) PRIOR TO APPLICATION OF BINDER

THIXOTROPIC BITUMEN 50 - 70 PEN TO BE APPLIED

13108-4 PRIOR TO APPLICATION OF BITUMINOUS

WITH FINE SAND / GRIT TO GET A MINIMUM 55 SKID

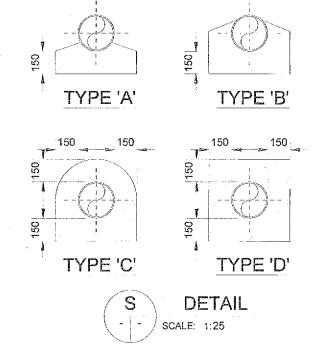
PORTABLE SKID RESISTANCE PENDULUM USED IN

ACCORDANCE WITH ROAD NOTE 27 AND SHALL NOT

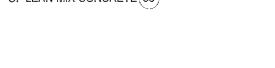
RESISTANCE VALUE AS DETERMINED BY THE

EXCEED 3mm THICKNESS AND 25mm WIDTH.

TO ALL VERTICAL CUTS IN ACCORDANCE WITH IS EN



5) THE HAUNCHES AND SURROUNDS TO BE FORMED USING FORM WORK AND PROVIDE A ROUGH CAST.



OF LEAN-MIX CONCRETE (35)

65x12mm IN SECTIONS & RUNGS 25mm IN DIAMETER, FIXED LADDERS 16) LADDER STRINGERS SHOULD BE ADEQUATELY SUPPORTED FROM STRINGERS SHOULD BE BOLTED TO CLEATS TO FACILITATE RENEWAL. 17) ALL LADDER RUNGS, HANDRAILS, SAFETY CHAINS ETC. SHALL BE HOT P01 | 22/03/2023 | ISSUED FOR PLANNING ₽F KΗ Description Date MANHOLE WALL SO THAT CHANNEL EXTENDS THE FULL LENGTH OF THE

WORK COMMENCES

31) GRANULAR BACKFILL MATERIAL SHALL BE IN COMPLIANCE WITH CLAUSE 804 (GRANULAR MATERIAL TYPE B) OF THE NRA

100mm. EACH LAYER BEING COMPACTED BY HAND & UNDERGOING

SPECIFICATION FOR ROAD WORKS, GRANULAR FILL SHOULD BE PLACED ON EITHER SIDE OF THE FILL IN UNIFORM LAYERS NOT EXCEEDING

TAMPING UNTIL IT HAS A MINIMUM LAYER OF 300mm COMPACTED OVER

CARE SHOULD BE TAKEN SO THAT THE TAMPING DOES NOT DISPLACE

THE PIPE FROM ITS CORRECT LINE AND LEVEL. SUBSEQUENT LAYER OF

GRANULAR MATERIAL TO BE COMPACTED IN 150mm THICK LAYERS TO

MINIMUM 450mm THICK COMPACTED COVER OVER THE CROWN OF THE

32) SELECTED FILL SHOULD BE FREE FROM STONES LARGER THAN 37mm,

LUMPS OF CLAY OVER 75mm, TIMBER, FROZEN MATERIAL & VEGETABLE

TAKEN SO THAT THE TAMPING DOES NOT DISPLACE THE PIPE FROM ITS

OR FOREIGN MATTER. SELECTED FILL ON EITHER SIDE OF THE PIPE

SHOULD BE LAID IN 100mm THICK LAYERS .EACH LAYER BEING

COMPACTED BY HAND & UNDERGOING TAMPING UNTIL IT HAS A

CORRECT LINE AND LEVEL & COMPACTED IN 150mm LAYERS.

EXCEEDING 300mm. EACH LAYER BEING WELL COMPACTED.

LOCAL AUTHORITY TO BE GRADE 20N/20MM CONCRETE.

A) TO BE USED FOR PIPE DEPTHS UP TO 600mm

SUPPORTED OF THE CONCRETE SURROUND.

APPROPRIATE, THE LOCAL AUTHORITY REQUIREMENTS.

OVER BACKFILL IN ACCORDANCE WITH PARKS DEPARTMENT/

B) INTERNAL AJ'S IF REQUIRED TO HAVE DOUBLE SEALED COVERS

C) EXTERNAL AJ's TYPICALLY TO BE PROPRIETARY UPVC WITH 35kN

IN 150mm C20 CONCRETE & TO HAVE CLASS D COVER AND FRAME

D) EXTERNAL AJ's IN AREAS SUBJECT TO TRAFFIC TO BE SURROUNDED

1. FIGURED DIMENSIONS ONLY TO BE TAKEN

ALL DRAWINGS TO BE CHECKED BY THE

APPROPRIATE, TO BE INFORMED BY THE

CONTRACTOR OF ANY DISCREPANCIES

THE CONTRACTOR SHALL UNDERTAKE A

THOROUGH CHECK FOR THE ACTUAL

LOCATION OF ALL SERVICES/UTILITIES.

5. ALL LEVELS SHOWN RELATE TO ORDNANCE

SURVEY DATUM AT MALIN HEAD

ABOVE AND BELOW GROUND, BEFORE ANY

BEFORE ANY WORK COMMENCES

ENGINEER/EMPLOYERS REPRESENTATIVE, AS

FROM THIS DRAWING.

CONTRACTOR ON SITE

THICK C16/20 CONCRETE.

LANDSCAPE ARCHITECTS.

NOTES:

38) AJ's (ARMSTRONG JUNCTIONS)

MINIMUM LAYER OF 450mm COMPACTED OVER CARE SHOULD BE

33) GENERAL BACKFILL MATERIAL SUITABLE FOR BACKFILL ABOVE

SELECTED FILL MATERIAL SHOULD BE FREE FROM BOULDERS, LUMPS

OF CONCRETE, TIMBER & VEGETABLE OR FOREIGN /CONTAMINATED MATTER. GENERAL BACK FILL SHOULD BE PLACED IN LAYERS NOT

MECHANICAL COMPACTION EQUIPMENT SHOULD NOT BE USED UNTIL

THERE IS MINIMUM OF 450mmCOMPACTED COVER OVER THE CROWN

34) PIPES WITH INADEQUATE COVER TO BE SURROUNDED IN 150MM

35) LEAN MIX BACKFILL IN EXISTING ROADS, WHERE REQUIRED BY THE

36) PAVING TO BE IN ACCORDANCE WITH THE ROAD SPECIFICATION & IF

37) GOOD QUALITY TOPSOIL 450mm MINIMUM THICKNESS, TO BE PLACED

THE LOCAL AUTHORITY ROAD DIVISION SPECIFICATION, MECHANICAL

COMPACTING EQUIPMENT SHOULD NOT BE USED UNTIL THERE IS A

Client:

An Roinn Oideachais agus Scileanna Department of **Education and Skills**

Project:

DoES ADAPT LOT 6.1 & 6.2 CLONDALKIN

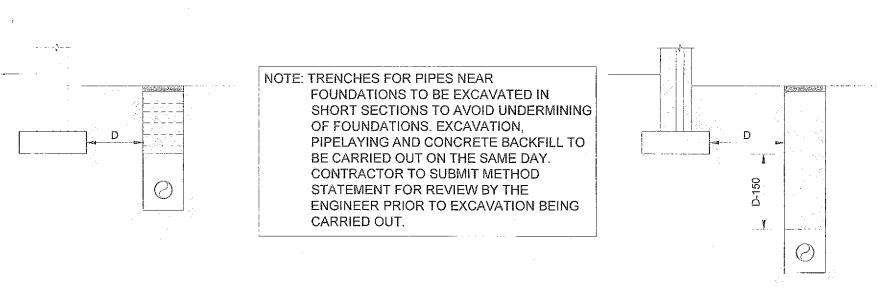
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BEDDING DETAILS

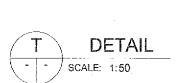
AS SHOWN Scale @ A1: Prepared by: Checked: Date: P. FANNING K. HIGGINS JAN' 2023 Project Director: BRIAN CARROLL Drawing Status: PLANNING

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WHERE 'D' IS LESS THAN 1m CONCRETE FILL TO LEVEL OF FOUNDATION BOTTOM)



WHERE 'D' IS 1m OR MORE CONCRETE FILL TO WITHIN D-150mm OF LEVEL OF FOUNDATION BOTTOM

CONCRETE PIPE LAID NEAR FOUNDATIONS